



Faculty of Computer Science and Information Technology

Location-based Kuching Walking Tour Mobile Application ('Sine?')

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Bachelor of Computer Science with Honours (Software Engineering)

2020

**LOCATION-BASED KUCHING WALKING TOUR MOBILE APPLICATION
(“SINE?”)**

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This project is submitted in partial fulfilment of the
requirements for the degree of
Bachelor of Computer Science with Honours
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Faculty of Computer Science and Information Technology

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**APLIKASI MUDAH ALIH BERASASKAN LOKASI UNTUK LAWATAN SAMBIL
BERJALAN KUCHING ('SINE?')**

CELINE HAREN ANAK PASCHAL

Projek ini merupakan salah satu keperluan untuk Ijazah Sarjana Muda Sains Komputer
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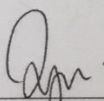
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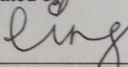
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TABLE OF CONTENTS

ACKNOWLEDGEMENT	i
TABLE OF FIGURES	v
LIST OF TABLES	ix
LIST OF ABBREVIATIONS	xi
ABSTRACT	xii
ABSTRAK	xiii
CHAPTER 1: INTRODUCTION	1
1.0 Project Title	1
1.1 Introduction	1
1.2 Problem Statement.....	2
1.3 Aims and Objectives.....	3
1.4 Methodology.....	3
1.4.1 Concept: Pre-planning	4
1.4.2 Inception	4
1.4.3 Iterations Construction.....	5
1.4.4 Release	6
1.4.6 Production	6
1.4.6 Retirement.....	6
1.5 Scopes.....	7
1.6 Significance of Project.....	7
1.7 Project Schedule	8
1.8 Expected Outcome.....	13
1.9 Chapter Summary	13
1.9.1 Chapter 1	13
1.9.2 Chapter 2.....	14
1.9.3 Chapter 3	14
1.9.4 Chapter 4.....	15
1.9.5 Chapter 5.....	15
1.9.6 Chapter 6.....	15
CHAPTER 2: LITERATURE REVIEW	16
2.1 Overview	16
2.2 Background Study	16
2.3 Reviews on Similar Existing System.....	17

2.3.1 Kuching City Tour Guide (Nurafiqah Azami, 2015).....	17
2.3.2 Tourist Guide Malaysia (MadDeveloper, 2019).....	19
2.2.3 Walking Tour (Livesgood Apps, 2017).....	21
2.4 Comparison of Existing System	23
2.5 Review on Hardware/Software Tools.....	25
2.5.1 Android Studio.....	25
2.5.2 Firebase	26
2.6 Proposed Functionalities	26
2.7 Summary	28
CHAPTER 3: REQUIREMENT ANALYSIS AND DESIGN	29
3.1 Overview	29
3.2 Analysis of the Proposed System	29
3.2.1 Functional Requirement.....	30
3.2.2 Non-functional Requirement	31
3.3 Survey/Questionnaire	32
3.4 Designing the Proposed System	42
3.4.1 Logical Design	43
3.4.1.1 Use Case Diagram.....	43
3.4.1.2 Activity Diagram	64
3.4.1.3 Sequence Diagram	67
3.4.1.4 Class Diagram.....	92
3.4.1.4.1 Class Normalization.....	92
3.4.1.4.2 Class Diagram.....	96
3.4.2 Physical Design.....	98
3.5 Summary.....	101
CHAPTER 4: IMPLEMENTATION	102
4.1 Overview	102
4.2 Required Components	102
4.2.1 Android Studio.....	102
4.2.2 Firebase	104
4.2.3 Google Maps API	107
4.3 Implementation of the Proposed System	108
4.3.1 User Features	110
4.3.2 Admin Features	132

4.4 Summary.....	143
CHAPTER 5: TESTING	144
5.1 Overview	144
5.2 Functional Testing	144
5.2.1 Test Cases	144
5.3 Non-Functional Testing.....	172
5.3.1 Reliability Testing Result	173
5.3.2 Usability Testing Result.....	174
5.3.3 Overall Non-Functional Testing Result	175
5.4 Summary.....	176
CHAPTER 6: CONCLUSION AND FUTURE WORK	177
6.1 Overview	177
6.2 Objective Achievement	177
6.3 Limitations.....	178
6.4 Future Work.....	178
6.5 Conclusion	178
REFERENCES.....	179
APPENDIX A	181
APPENDIX B	184
APPENDIX C	189

TABLE OF FIGURES

Figure 1.1 Main Phases of Agile Workflow	3
Figure 1.2 Agile Software Development Process	5
Figure 1.3.0 Gantt Chart for Final Year Project.....	8
Figure 1.3.1 Gantt Chart for Final Year Project.....	8
Figure 1.3.2 Gantt Chart for Final Year Project.....	9
Figure 1.3.3 Gantt Chart for Final Year Project.....	9
Figure 1.3.4 Gantt Chart for Final Year Project.....	10
Figure 1.3.5 Gantt Chart for Final Year Project.....	10
Figure 1.3.6 Gantt Chart for Final Year Project.....	11
Figure 1.3.7 Gantt Chart for Final Year Project.....	11
Figure 1.3.8 Gantt Chart for Final Year Project.....	12
Figure 1.3.9 Gantt Chart for Final Year Project.....	12
Figure 1.3.10 Gantt Chart for Final Year Project.....	12
Figure 1.3.11 Gantt Chart for Final Year Project.....	13
Figure 2.1 User Interface of Kuching City Guide Mobile Application.	17
Figure 2.2 User Interface Tourist Guide Malaysia Mobile Application.	19
Figure 2.3 User Interface of The Walking Tour Mobile Application.	21
Figure 3.1 Bar Chart of the Age of Respondents	33
Figure 3.2 Pie Chart of the Percentage of the Respondent.....	33
that has Gone on a Walking Tour.....	33
Figure 3.3 Pie Chart of the Percentage of Respondent that is Interested to go on a	34
Walking Tour Around the Kuching City.....	34
Figure 3.4 Pie Chart of the Preferences of Travelling With a.....	35
Tour Guide	35
Figure 3.5 Graph of How Respondents Find places of	36
Attraction when Touring	36
Figure 3.6 Pie Chart of Percentage of Respondent that Look Forward to	37
Know More about the Place of Visit.....	37
Figure 3.7 Pie Chart of the Information or History Finding	37
Figure 3.8 Graph of How Respondents Get Information	38
When Touring Around the Kuching City.....	38
Figure 3.9 Graph of How Respondents Prefer to Get Information	39

Figure 3.10 Pie Chart of Percentage of Respondents that are	40
Interested in a Mobile App.....	40
Figure 3.12 Use Case Diagram of the Proposed System.....	43
Figure 3.13 Activity Diagram of the Proposed System: User.....	64
Figure 3.14 Activity Diagram of the Proposed System: Admin	65
Figure 3.15 Sequence Diagram: Registration	67
Figure 3.16 Sequence Diagram: Login	68
Figure 3.17 Sequence Diagram: Update Profile.....	69
Figure 3.18 Sequence Diagram: View Attraction List.....	71
Figure 3.19 Sequence Diagram: View Map	71
Figure 3.20 Sequence Diagram: View Direction	72
Figure 3.21 Sequence Diagram: View Current Location	73
Figure 3.22 Sequence Diagram: View Stories	74
Figure 3.23 Sequence Diagram: Rate Stories.....	75
Figure 3.24 Sequence Diagram: Comment on Stories	76
Figure 3.25 Sequence Diagram: View Activities.....	77
Figure 3.26 Sequence Diagram: View Tour Agency	78
Figure 3.27 Sequence Diagram: Manage Post	79
Figure 3.28 Sequence Diagram: Give Feedback.....	82
Figure 3.29 Sequence Diagram: Manage Attractions	83
Figure 3.30 Sequence Diagram: Manage Stories	85
Figure 3.31 Sequence Diagram: Manage Feedbacks	86
Figure 3.32 Sequence Diagram: Manage Activities.....	88
Figure 3.33 Sequence Diagram: Manage Tour Agency	90
Figure 3.34 The User Account Class in 0ONF	92
Figure 3.35 The User Account Class in 1ONF	93
Figure 3.36 Second Object Normal Form (2ONF)	94
Figure 3.37 Third Object Normal Form (3ONF)	95
Figure 3.38 Class Diagram of the Proposed System.....	96
Figure 3.39 Interfaces of the Proposed System.....	98
Figure 3.40 Interfaces of the Proposed System.....	99
Figure 4.1 Android Studio.....	102
Figure 4.2 Firebase Console.....	104
Figure 4.3 Google API Component Used	107

Figure 4.4 Sample of Data Structure in Firebase Realtime Database	109
Figure 4.5 User's Registration User Interfaces	110
Figure 4.6 User's Login User Interfaces	111
Figure 4.7 Permission to Access Device's Location.....	112
Figure 4.8 Snippet of the Permission Added to App Manifest	113
Figure 4.9 User's Update Profile User Interfaces	113
Figure 4.10 View Attraction List User Interfaces	114
Figure 4.11 View Map User Interfaces	115
Figure 4.12 Get Direction User Interfaces	116
Figure 4.13 View Map of Current Location.....	117
Figure 4.14 View/Listen to Stories User Interface.....	118
Figure 4.15 Rate Stories User Interface	119
Figure 4.16 Add Comment to Stories User Interface.....	120
Figure 4.17 Walking Tour User Interface	121
Figure 4.18 Walking Tour Map View User Interface	122
Figure 4.19 View Activities User Interface	123
Figure 4.20 View Tour Agency User Interface.....	124
Figure 4.21 View All Post List User Interface.....	125
Figure 4.22 View Own Post List User Interface	126
Figure 4.23 View a Specific Post User Interface	127
Figure 4.24 Add Post User Interface	128
Figure 4.25 Update Post User Interface	129
Figure 4.26 Delete Post User Interface	130
Figure 4.27 Give Feedback User Interface.....	131
Figure 4.28 Admin Login User Interface	132
Figure 4.29 Add Attraction and Stories of Attraction User Interface	133
Figure 4.30 Update Attraction and Update Stories of Attraction User Interface.....	134
Figure 4.31 Delete Attraction User Interface	135
Figure 4.32 Admin View and Reply Feedback User Interface	136
Figure 4.33 Admin Delete Feedback User Interface.....	137
Figure 4.34 Admin Add an Activity User Interface.....	138
Figure 4.35 Admin Update Activity User Interface	139
Figure 4.36 Admin Delete Activity User Interface	140
Figure 4.37 Admin Add Tour Agency User Interface	141

Figure 4.38 Admin Update Tour Agency User Interface.....	142
Figure 4.39 Admin Delete Tour Agency User Interface	143
Figure 5.1 Result of Reliability Testing	173
Figure 5.2 Result of Usability Testing	174
Figure 5.3 Result of Testing	175

LIST OF TABLES

Table 2.1 Comparison of Three Existing Systems and The Proposed System.	23
Table 3.1 Functional Requirement	30
Table 3.2 Actor's Role	44
Table 3.3 Use Case Description: Register.....	45
Table 3.4 Use Case Description: Login	46
Table 3.5 Use Case Description: Update Profile.....	47
Table 3.6 Use Case Description: View Attractions List	48
Table 3.7 Use Case Description: View Map	49
Table 3.8 Use Case Description: View Direction	50
Table 3.9 Use Case Description: View Current Location of Attraction	51
Table 3.10 Use Case Description: Read Stories of the Attraction	52
Table 3.11 Use Case Description: Rate the Stories.....	53
Table 3.12 Use Case Description: Add Comment to the Stories	54
Table 3.13 Use Case Description: View Activities.....	55
Table 3.14 Use Case Description: View Tour Agency	56
Table 3.15 Use Case Description: Manage Post	57
Table 3.16 Use Case Description: Provide Feedback	58
Table 3.17 Use Case Description: Manage the Attraction	59
Table 3.18 Use Case Description: Manage the Stories of the Attraction.....	60
Table 3.19 Use Case Description: Manage Users' Feedbacks	61
Table 3.20 Use Case Description: Manage Activities.....	62
Table 3.21 Use Case Description: Manage Tour Agency	63
Table 5.1 Functions to be Tested	144
Table 5.2 Test Case for User Registration	146
Table 5.3 Test Case for User Login	147
Table 5.4 Test Case for User Update Profile	149
Table 5.5 Test Case for View Attraction List	150
Table 5.6 Test Case for View Map	150
Table 5.7 Test Case for Get Direction.....	151
Table 5.8 Test Case for View Map of Current Location.....	153
Table 5.9 Test Case for View/Listen to Stories	154
Table 5.10 Test Case for Rate Stories	155
Table 5.11 Test Case for Add Comment to Stories.....	156

Table 5.12 Test Case for View Activities	156
Table 5.13 Test Case for View Tour Agency.....	158
Table 5.14 Test Case for Manage Post.....	159
Table 5.15 Test Case for Add Feedback	160
Table 5.16 Test Case for Admin Login.....	161
Table 5.17 Test Case for Manage Attraction	162
Table 5.18 Test Case for Manage Stories of Attraction	164
Table 5.19 Test Case for Manage User's Feedback.....	165
Table 5.20 Test Case for Manage Activities	166
Table 5.21 Test Case for Manage Tour Agency	169
Table 6.0 Summary of Objectives and Achievements	177

LIST OF ABBREVIATIONS

API	Application Programming Interface
IDE	Integrated Development Environment
GPS	Global Positioning System
UML	Unified Modelling Language

ABSTRACT

Location-Based Kuching Walking Tour ('Sine?') is a mobile application that will help the user to view stories or history behind the popular tourist attraction in Kuching based on their located current location. Furthermore, this mobile application will let the users locate the nearest tourist attraction or any historical places around Kuching city. 93.3% of 60 respondents supported the objective of this project which is to develop a mobile application that will help users to truly understand the historical values of the places of attraction in Kuching. Furthermore, geolocation will be applied in the development of this application as it allows the implementation of Global Positioning System (GPS). This mobile application will be developed in an android environment. This project implementation will adopt the Agile Software Development methodology. The main outcome of this location-based mobile application project is to guide the end-users to truly understand the history behind the historical building and places around Kuching while touring. Hence, this mobile application will be most beneficial for end-users that tours around the Kuching city as it guides and give genuine information within the Kuching heritage trail.

ABSTRAK

Aplikasi Mudah Alih Berasaskan Lokasi Untuk Lawatan Sambil Berjalan Kuching ('Sine?') ialah aplikasi mudah alih yang dapat membantu pengguna sistem tersebut untuk mendapatkan sejarah atau cerita di sebalik setiap tempat pelancongan yang berada di sekitar bandar Kuching. Selain itu, applikasi ini dapat menentukan lokasi pengguna dengan tempat tarikan yang terdekat berdasarkan lokasi pengguna dan dapat memberi petunjuk arah kepada pengguna. 93.3% daripada 60 responden telah menyokong idea projek ini iaitu untuk membangunkan aplikasi mudah alih yang dapat membantu penggunanya untuk lebih memahami nilai sejarah bagi tempat-tempat bersejarah khususnya di bandar Kuching. Tamabahan pula, teknolgi geolokasi akan digunakan bagi membenarkan penggunaan Sistem Penentududukan Global atau lebih dikenali sebagai "Global Positioning System (GPS)". Aplikasi mudah alih ini akan dibina berasaskan telefon bimbit Android. Kaedah Pembangunan Perisian Agile akan digunakan dalam proses menjayakan projek ini. Justuru itu, Aplikasi Mudah Alih Berasaskan Lokasi Untuk Lawatan Sambil Berjalan Kuching ('Sine?') ini akan dapat membantu pengguna untuk lebih memahami nilai sejarah di sebalik bangunan dan tempat-tempat bersejarah di sekitar bandar Kuching sambil mengadakan lawatan sambil berjalan. Natijahnya, aplikasi mudah alih ini akan bermanfaat bagi pengguna yang mengadakan lawatan sambil berjalan di sekitar bandar Kuching kerana applikasi ini dapat memberi petunjuk jalan dan informasi yang tepat di sepanjang Jejak Warisan Kuching.

CHAPTER 1: INTRODUCTION

1.0 Project Title

Location-based Kuching Walking Tour Mobile Application ('Sine?').

1.1 Introduction

A walking tour is a tour to the historical sites, cultural places or any attractions in one or more destinations that are done by walking on foot ("Walking Tour", 2019). A walking tour is usually a tour that is guided by a tourist guide. On a walking tour, stories about the places will be told along the way while walking around at the places of attraction. Other activities, such as drawings, taking photos, etc. can also be done while having a walking tour.

Kuching which is the capital city of Sarawak is one of the popular walking tour spots where tourists from all over the world come to see the uniqueness of the history and cultures that are portrayed by the surrounding historical buildings and places around the city itself. Hence, this makes Kuching as a city that is full of amazing stories and history which not many may know and realised about it. The city has developed starting from the White Rajah years until today. There are many places that can be visited around the Kuching city, such as the Fort Margherita, Sarawak Museum, The Old Court House, Astana and etc. Besides walking or touring while learning the stories or history of Kuching, having a food tour around the Kuching city would also be interesting as there are various types of local cuisine that can be enjoyed by everyone around the Kuching city. Furthermore, Kuching is also known for its delicious local food such as the Sarawak Laksa, Kolo Mee, Kek Lapis and many more.

Hence, while walking around the Kuching city, anyone who went for a walking tour around the Kuching city can enjoy understanding the beautiful stories behind the places and at the same time discovers the delicious local food that can be found in the Kuching city. Furthermore, most of the attractions and historical buildings are within a walking distance

which makes a walking tour around the Kuching city more interesting and convenient because there is so much to discover.

1.2 Problem Statement

The mix heritage and culture in Sarawak attracted tourists from other countries to visit Sarawak (Lau, 2018). In Kuching, there is a heritage trail that allows tourists to explore the historical buildings and places around it. Touring around the city without a proper guide is fun and adventurous. However, touring without a guide would be a waste as tourists cannot truly experience the true meaning behind historical buildings and places around the Kuching city. Hence, touring without a guide will lead to tourists getting stories that are not clear and genuine about the historical buildings and places around the Kuching city.

Besides, if the tourists are attracted to the heritage and stories about a building or a place, getting genuine information about it would be hard unless they bring the Sarawak History book along with them or have a tour guide to tell them the stories. Carrying a book would be troublesome while walking or touring around and not everyone will tour with a tour guide. Besides, a tour that is guided by a tour guide often have their itinerary and the list of places to visit will be fixed. This leads to a lack of flexibility of the tour (Simm, n.d.). Furthermore, not everyone is willing to pay extra for a tour guide.

1.3 Aims and Objectives

The objectives of this project are as below:

1. To design and develop a mobile application that provides guidance to end users on touring and knowing more about the places along the Kuching Heritage Trail.
2. To enable historians or local people to share stories about the places along the Kuching Heritage Trail.
3. To analyse the usability of this mobile application to the end-users.

1.4 Methodology

The agile software development methodology is chosen to develop this mobile application. It is chosen as it allows changes during the development stages and it is a fast process. Hence, any changes in the requirement can be done without having to worry that it will disrupt the whole development process. Furthermore, building a mobile application require feedbacks from the client or user which complies with one out of the four values of agile which is customer collaboration over contract negotiation (Eby, 2016). Therefore, it is a suitable methodology to develop the mobile application ‘Sine?’ as it needs to be completed for a period of approximately nine months and every process must meet the requirement stated. Figure 1.1 shows the general phases of an agile software development methodology.

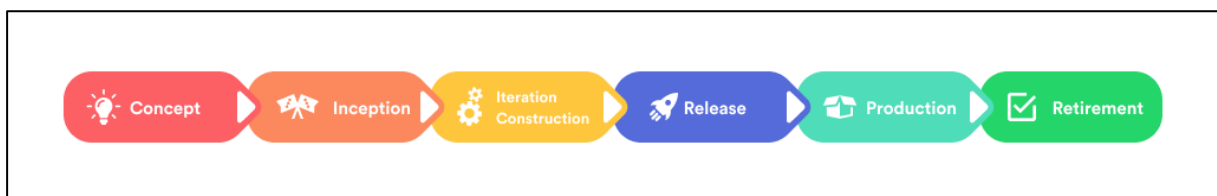


Figure 1.1 Main Phases of Agile Workflow
Adapted form (Anurina, 2019).

1.4.1 Concept: Pre-planning

Concept is the first stage of the agile methodology. In this stage, the solution to the problem statement is recorded. Then the evaluation of the solution will be done according to the surrounding environment and situation. In terms of the development of this project 'Sine?', the problem is analysed to know the requirements needed to build the system according to the users' needs. Basically, this first stage is done to get a vision of what and how this mobile application will function.

1.4.2 Inception

In this phase, the project will be initiated by gathering all the initial requirements for the mobile application 'Sine?'. After gathering the requirement, requirement modelling will also be done to get a brief idea on the requirements needed for the development of this mobile application. Besides, the task based on the requirement will be arranged according to its priority and planning for the development of every task will be done in this phase. Hence, the time taken to deliver each task will be estimated during this phase. However, any changes can be made in the future according to the users' requirements or feedbacks.

1.4.3 Iterations Construction

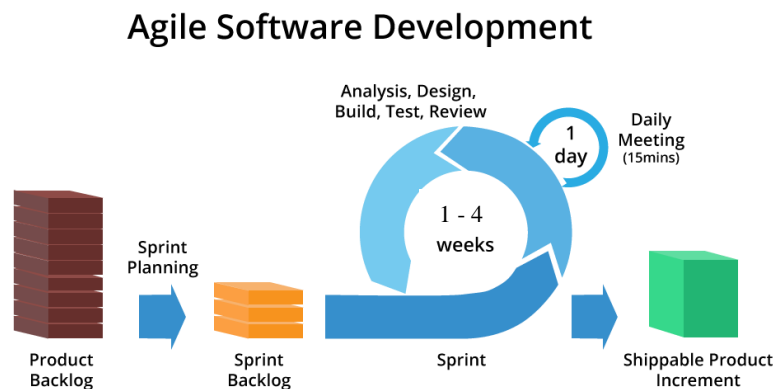


Figure 1.2 Agile Software Development Process
Adapted from ("An agile and Scrum approach to Software Development | Codingmart",
2019).

During this phase, all defined requirements and feedbacks have been obtained. The requirements will be the task that is to be completed at every sprint. A sprint is a time duration, planned for a task to be developed and tested. Every sprint will include design, implementation, testing and review stages. The development of the mobile application will begin based on the priority of the task or a sprint backlog. Every task will be developed in every different sprint. If there are any changes that needed, the changes will be implemented first until the task is ready for release. After every task has been released, the next task will be developed continuously until all the user stories listed in the sprint backlog is completed. The process for every sprint will take around two to four weeks to be completed.

1.4.4 Release

In this phase, the whole requirement is fulfilled, and system testing will be done to ensure that the mobile application is ready to be used. The functionality based on the user stories or the requirements of the mobile application 'Sine?' will be tested. Any errors that occur will be fixed in this phase. Then, when the product has run smoothly, the mobile application 'Sine?' is to be deployed. Furthermore, system documentation will also be done during this phase.

1.4.6 Production

This phase emphasises on making sure that the product release runs smoothly. Besides, user training or any kind of support will be done if needed. This phase will end if support is no longer needed or when the released is scheduled for retirement ("The Stages of the Agile Software Development Life Cycle", 2017).

1.4.6 Retirement

The retirement phase is the final stage of the agile software development methodology where the release of the product is not supported anymore. This means that the development of the mobile application is completed and will be no longer use. However, in terms of this project, since the time allocated to complete this project is approximately nine months, this project will only cover up to the production phase. The retirement phase will be continued if there are any parties that would like to replace or upgrade this version of the mobile application.

1.5 Scopes

‘Sine?’ is a location-based mobile application that will give an alternative platform for a guided walking tour. The main target of this application will be any possible users who want to go on a walking tour around the Kuching city. This mobile application will include features that will help the users to truly understand the stories, history, and culture behind the places of attractions along the Kuching Heritage Trail. Besides, users will be able to give ratings, feedback and comments on the place they visited. Hence, this mobile application will act as a virtual tour guide, but the recommendation of places will be linked to other websites as they are many recommendations website and mobile application available. Furthermore, this project will be developed in an android based environment. The mobile application ‘Sine?’ will also require an internet connection in order for the users to fully utilise the apps.

1.6 Significance of Project

‘Sine?’ is a mobile application is specifically designed to help possible users or anyone that is interested in going for a walking tour, to truly understand the true meaning behind the places around the Kuching city. Hence, Kuching city will have its own mobile application specifically to help any possible users that would go for a walking tour around the Kuching city. This mobile application will be a medium to preserve the history of the places in the Kuching city for everyone to read and understand. Besides, this will give an opportunity to those who are unlikely to travel with a tour guide to get the same feeling of travelling with a tour guide that can tell stories to the user while walking around. Hence, this application will not only show direction but can also tell stories. This mobile application will also give an opportunity to local people to share their thoughts on the stories behind the history and places in the Kuching city.